

Declaration

I, XI Yongzhi, hereby declare as follows:

The undersigned declares further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

I am the inventor and applicant of the US Patent Application Serial No. 10/534,538.

Although we submitted the polypeptide sequences (Genbank accession number AAK98621) on 19 July 2001 with the US US NCBI-Genbank, however, it had never been published on or after that day because we withdraw it immediately, the information respect the polypeptide was empty until we updated the new information on Feb 8, 2006. The detailed explanations are as follows:

I. Observation on relevant date of the sequences in the present patent.

As we know, US NCBI-GenBank, established by the National Center for Biotechnology Information of National Institutes of Health, collects and arranges numerous nucleotide sequences of genes and the corresponding amino acid sequences provided by biological scientists from every country in the world.

Here, we would like to remind the US examiner that: the date, mentioned in the LOCUS line recorded in the NCBI-GenBank data, is the date when the data is finally published. In most of cases, It is also the date when the data is first published. Another recorded date (see below) is the date when the sequence is submitted with the databank. It should be noticed that the two dates are not guaranteed under laws and the databank does not declare that the two dates are correct. (the relevant

original text: "The date on the locus line is the date the record was last made public. If the record has not been updated since being made public, the date would be the date that it was first made public. If any of the features or annotations were updated and the record was rereleased, then the date corresponds to the last date the entry was released. Another date contained in the record is the date the record was submitted (see below) to the database. It should be noted that none of these dates is legally binding on the promulgating organization. The databases make no claim that the dates are error -free." see Ilene Karsch-Mizrachi and B. F. Francis Ouellette. THE GENBANK SEQUENCE DATABASE. Chapter 3, pp51, last paragraph; in *Bioinformatics: A practical guide to the analysis of gene and proteins. Second Edition*. Andreas D. Baxevanis & B.F.Francis Ouellette., eds. Copyright©2001 John Wiley & Sons, Inc. ISBNs: 0- 471-38390-2 (Hardback) : 0-471-38391-0 (Paper): 0-471-22392-1 (Electronic)). Hence, the time or date for the sequences recorded in NCBI-GenBank is just provided to the reader for reference only, and cannot be used as the law grounds for arbitration.

II. Observation on the inventiveness of the sequence.

The accession number AAK98621 refers to the amino acid sequence of the chicken type II collagen which is translated by the mRNA (AY046949) of the chicken type II collagen. As we declared in June 29, 2009, AAK98621 and AY046949 indeed were submitted¹ with US NCBI-GenBank on July 19, 2001. However, taken into multiple factors, we withdrew the submission of the two sequences from NCBI-Genbank immediately, and also withdrew the records on relevant sequences in NCBI-Genbank. Only the corresponding accession number and filing date are left. More importantly, NCBI-Genbank does not disclose these sequences (see NCBI-GenBank search page and detailed record Attachments 1 and 2). That is, AAK98621 is formally published on February 8, 2006, much latter than 2002 when the patent was filed. Hence,

the novelty and the Inventiveness of the present patent is not taken away or interfered.

The publication date of AAK98621 and AY046949 are further checked as follows. The search results of all the history records of AAK98621 and AY046949, are separately summarized based on author and accession number:

1. AY046949, version AY046949.1 GI:15546069, is the version of the mRNA of chicken type II collagen submitted on February 8, 2006, with a fragment of 4837bp in length. Although it is shown that version AY046949 is first published on July 19, 2001, no relevant nucleotide sequence can be found in NCBI-GenBank. Namely, the sequence submitted on July 19, 2001 is not published. Its novelty and inventiveness are preserved. AY046949 is formally published on February 8, 2006(see NCBI-GenBank search page below and detailed record attachment 1).

Search page for AY046946

点按 Go 就出现下面的画面

GenBank Overview

Search: AY046946

What is GenBank?

GenBank® is the NIDDK genetic sequence database, an annotated collection of all publicly available DNA sequences (NCBI, NCBI Research, 2009 June 30, 09:00 UTC/11:00:40). There are approximately 100,553,156,766 bases in 100,431,602 sequence records in the traditional GenBank database and 140,165,117,763 bases in 48,443,007 sequence records in the WGS division as of August 2009.

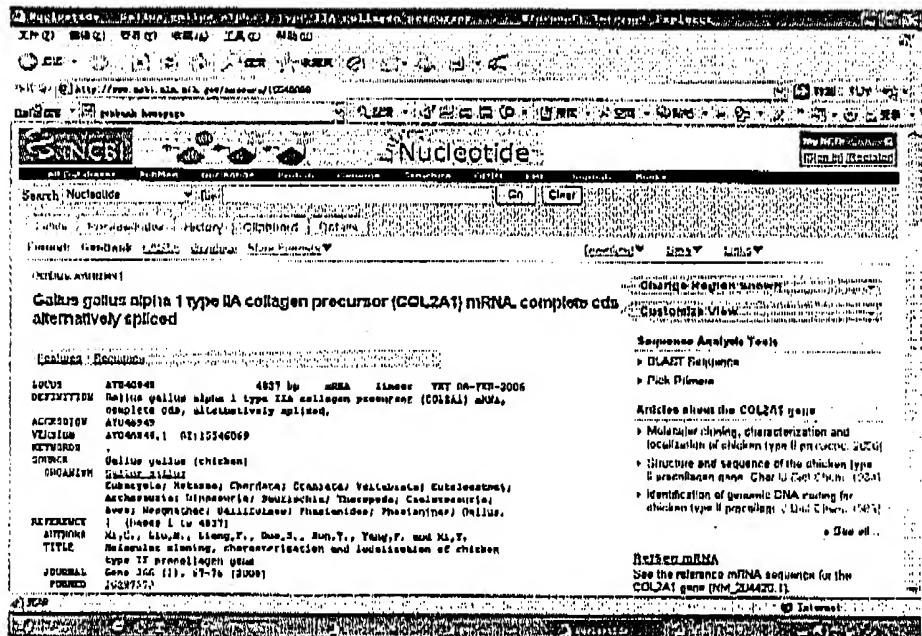
The complete release dates for the current version of GenBank are available on the NCBI site. A new release is made every two months. GenBank is part of the International Nucleotide Sequence Database Collaboration, which comprises the DNA DataBank of Japan (DDJ), the European Molecular Biology Laboratory (EMBL), and GenBank at NCBI. These three organizations exchange data on a daily basis.

An example of a GenBank record may be viewed for a *Saccharomyces cerevisiae* gene.

In The News: 2009 H1N1 Flu Virus (Swine Flu)

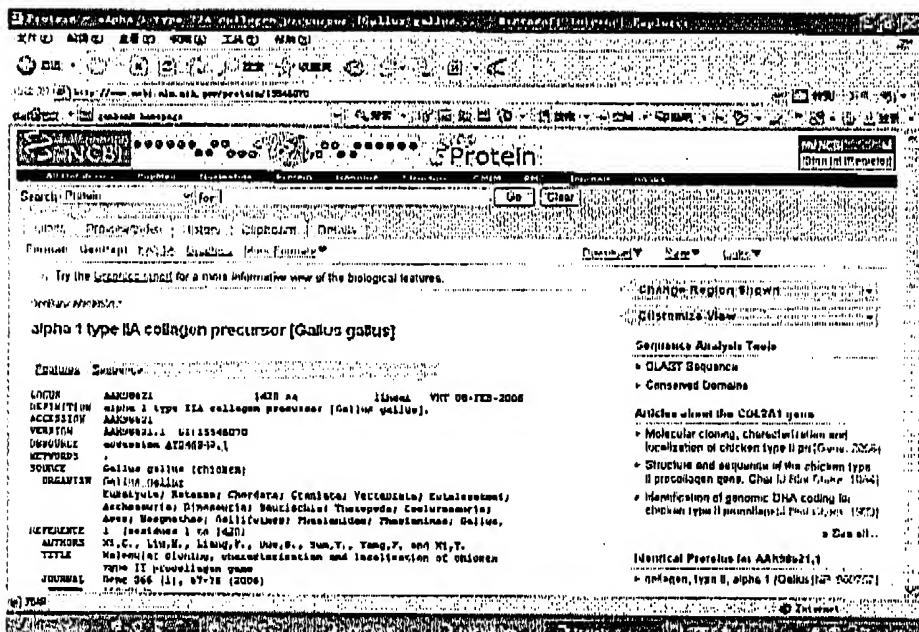
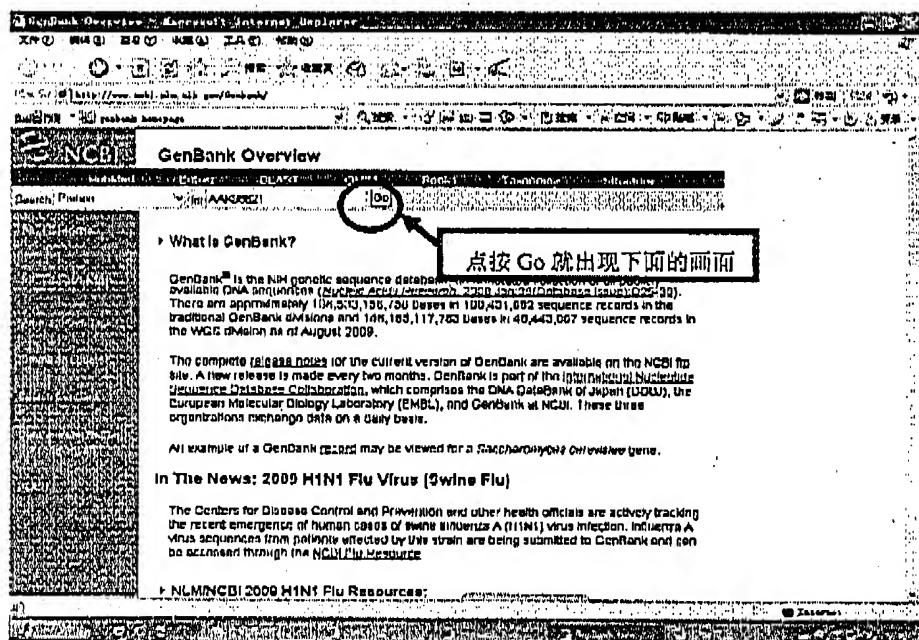
The Centers for Disease Control and Prevention and other health officials are actively tracking the recent emergence of human cases of swine influenza A (H1N1) virus infection. Influenza A virus sequences from patients infected by this strain are being submitted to GenBank and can be accessed through the [NCBI Flu Resources](#).

NLM/NCBI 2009 H1N1 Flu Resources:



2. AAK98621, version AAK98621.1 GI:15546070, is the version of the amino acid sequence of chicken type II collagen submitted on February 8, 2006, with a fragment of 1420aa in length. Although it is shown that version AAK98621 is first published on July 19, 2001, no relevant amino acid sequence can be found in NCBI-GenBank. Namely, the sequence submitted on July 19, 2001 is not published. Its novelty and inventiveness are preserved. AAK98621 is formally published on February 8, 2006 (see NCBI-GenBank search page below and detailed record attachment 2).

Search page for ΛΛΚ98621



3. AF452711 is the genomic sequence of chicken type II collagen. Version AF452711.2 GI: 31340541, is the newest version of the genomic sequence of chicken type II collagen submitted on February 8, 2006. The fragment comprises exons 8-52 and has 12003bp in length. However, version AF452711.1, updated on June 3, 2003, is part of the genomic sequence of chicken type II collagen, with only 5494bp in length. The two are different by 7509 bp. Although it is also shown that version AF452711 was first submitted on November 27, 2001, just like AY046949 and AAK98621 sequence, no corresponding genomic sequence can be found in GenBank (see NCBI-GenBank search page below and detailed record attachments 3 and 4) .

Search page for AF452711

点按 Go 就出现下面的界面

I declare that the above statements are true to the best of my knowledge.

Xi Yongzhi, M.D
November 16, 2009

John

Nov 17, 2009

Attachment 1: Search record for AY046949, version AY046949.1 GI:15546069

LOCUS AY046949 4837 bp . mRNA [linear] NRT 08-FEB-2006
DEFINITION Gallus gallus alpha 1 type III collagen precursor (COL2A1) mRNA, complete cds, alternatively spliced.
ACCESSION AY046949
VERSION AY046949.1 GI:15546069
KEYWORDS .
SOURCE Gallus gallus (chicken)
ORGANISM Gallus gallus
Eukaryota; Metazoa; Chordata; Craniota; Vertebrata; Euteleostomi; Archosauria; Dinosauria; Sauropsida; Theropoda ; Coelurosauria; Aves; Noognathae; Galliformes; Phasianidae; Phasianinae; Gallus.
REFERENCE 1 (bases 1 to 4837)
AUTHORS Xi, C., Liu, N., Liang, F., Guo, S., Sun, Y., Yang, F. and Xi, Y.
TITLE Molecular cloning, characterization and localization of chicken type III procollagen gene
JOURNAL Gene 366 (1), 67-76 (2006)
PUBMED 16297573
REFERENCE 2 (bases 1 to 4837)
AUTHORS Caixia, X., Yongzhi, X., Sigi, G. and Yiyang, S.
TITLE Direct Submission
JOURNAL Submitted (19-JUL-2001) Immunology, Beitaipinglu Hospital, Beitaipinglu, Beijing 100039, China
FEATURES Location/Qualifiers
source 1..4837
/organism="Gallus gallus"
/mol_type="mRNA"
/db_xref="taxon:9031"
/tissue_type="sternal"
/dev_stage="17-day embryo"
/country="China"
/note="breed: San-Huang"
gene 1..4837
/gene="COL2A1"
CDS 15..1307
/gene="COL2A1"
/note="lacks exon 2; alternatively spliced"
/codon_start=1
/product="alpha 1 type III collagen precursor"
/protein_id="AAK98621.1"
/db_xref="GI:15546070"
/translation="MIGRRPPRSAVLLLLLLLITAMMAQDRDLRQPQPKQQKGEPCD
IKDVGPRGPPGPQGPAGEQQQQRDRGEKGEKGAPGPRGRDGEPTPGNPGPPGPPGP
PGPPGLGNNPAAQMAGGFDEKAGGAQMVGVMQGPMGPMGPRGPPGPTGAPGPQGFQGNP"

NOTE: The serial number of the nucleotide sequence

批注: the sequence of other vertebrates

NOTE: This is the time when the sequence was submitted for the second time, and also is the time when the sequence was first published.

批注:

NOTE:

批注: The sequence was submitted for the second time after the paper was published.

批注:

批注:

批注: This is the date when the sequence was first submitted before the withdrawal from the Genebank; but the nucleotide sequence submitted this time was not disclosed, no relevant sequence can be found in Genebank.

NOTE: AAK98621 (the serial number of the amino acid sequence corresponding to AY046949)

GEPGEPGAAGPMGPRGPPCPCKPGDDGEGTKPGKSGERGPPCPQGARGFPGTPGLPG
 VKGHRGYPLDGAKGEAGAPGAKGSGSPGENGSPGPMGPRCLPGERGRPGPSAAGA
 RGNGLCPAGPPCPVGPAGAPGFPAGCPSKGEAGPTGARGPAGAQQPRGESGTPGSP
 GPAGAPGNPCTDGIAGAKGSAGAPGIAAGAPCPGPRGPPGPQGAIGPLGPKGQTGEPG
 IAGFKGEQGPKGETGPAGPQCAPGPAGPAGPAGPAGPAGPAGPAGPAGPAGPAGPAGP
 PGQDGLACPKGAPGPRGPAGLACPKGATCDPGRPGEPLPGARGLTGRPDAGPQKV
 GPTGAPGEGDGRPGPPCPQGARGQPCVMGPPCIPKANGEPGKAGEKGLPCAPCLRGLPG
 KDGETGAAGIIPGIPAGPVGGERGEQGAPGPGFQGGLPGPPGIPPGESGKPGDQGVPEAGA
 PGLVGPRGERGFPCEGCGPAGQGLQGPRLPGTPTGTDGPKGATGPAGPNAQGPPGLQ
 GMPGERGAAGIAGLKGDGRDVGEKPGECAPCKDARGLTGIPGPPGAGPNEKGESG
 PPCPSGAAACARGAFGERGEPGAPGPGAGFAGPPGADGQPGAKCQEPCQKGDAGAPGP
 QGPGSGAPGPQGPTGVTGPKGARGAQGCPPCATGFPGAAGRVRGPPGPNPGPPCPGSA
 GKDGPKGVRCDAQGPPCRAGDPGLQGPAGIPGEKEGPGEDEGPAGPDGPPCPQCLAGQRC
 1VGLPGQRGERGFPGLPGPSGEPKQCAPGAGSADRGPVPPGPVCPGPGTGPAGEGPREGN
 PGADGI,PCRDGAAGVKGDRTGETGIPVGAPGAPGAPGAPGPGVPGTAKQGDRGETGAGQPM
 GPSGPAGARGMGPQGPRGDKGETCEAGEERGLKGHRGFTGLQGLPGPPGPAGDQGAG
 PAGPSGPRGPPCPVCPSCDKGSNGMPGPIGPPGPRGRSGEPGPAGPPGNGPPGPPGP
 PCTGIDMSAFAGLQGCTEKGPDPIRYMRRADEAAGGLRQIIDVEVDATLKSNNQIESIRS
 PEGSKKNPARTCRDIKLCMPEWKSGDYWIDPNQGCTLDALKVFCNMETGETCVYPTPS
 SIPRKNNWTSKTKDKHHVWFAETINGCPHFSYGDENLSPNTASIQMTFLRLL\$TEGSQ
 NVTYHCKNSIAYMDEETGNLKKAITIQQSNDEIRAEGNSRFTYSVLEDGCTKHTGKW
 GKTVEYRLQKTSRLSTVDTAPMDIGGADQEFGVD1GIPVCFL"

sig_peptide

45..119

/gene="COL2A1"

misc_feature

120..386

/gene="COL2A1"

/note="Region: N-propeptide"

misc_feature

387..461

/gene="COL2A1"

/note="Region: N-telopeptide"

misc_feature

462..3485

/gene="COL2A1"

/note="Region: triple helical domain"

misc_feature

3486..3566

/gene="COL2A1"

/note="Region: C-telopeptide"

misc_feature

3567..4304

/gene="COL2A1"

/note="Region: C-propeptide"

ORIGIN

1 acgtgttcggc cccgacggggcgtt GTRAGAGGGGC ctccggggggc cggccatggccggggccggcc
 61 cggcccccgtc cggccgttata ctctctctcc ttccttccttc ttcggggccggcc GCGAGCCGCGC
 121 aggucccggca cctccggacaa cctggggccca aaggacagaaa ggggggggggggggggggggggggg
 181 aagatgttgttggggcccccggc gggggcccccggc ggggggggggggggggggggggggggggggggggg

批注: Nucleotide sequence
(mRNA)

Attachment 2: Search record for AAK98621, version AAK98621.1 GI:15546070

LOCUS | AAK98621| 1420 aa linear | VRT | 08-FEB-2006
 DEFINITION alpha 1 type IIA collagen precursor [Gallus gallus].
 ACCESSION AAK98621
 VERSION AAK98621.1 GI:15546070
 DBSOURCE accession | AY016949.1 |
 KEYWORDS .
 SOURCE Gallus gallus (chicken)
 ORGANISM Gallus gallus
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrate; Euteleostomi;
 Archosauria; Dinosauria; Saurischia; Theropoda; Coelurosauria;
 Aves; Neognathae; Galliformes; Phasianidae; Phasianinae; Gallus.
 REFERENCE 1 (residues 1 to 1420)
 AUTHORS Xi,C., Liu,N., Liang,F., Guo,S., Sun,Y., Yang,F. and Xi,Y.
 TITLE Molecular cloning, characterization and localization of chicken type II procollagen gene
 JOURNAL Gene 366 (1), 67-76 (2006)
 PUBMED 16297573
 REFERENCE 2 (residues 1 to 1420)
 AUTHORS Caixia,X., Yongzhi,X., Siqi,G. and Yiyi,S.
 TITLE Direct Submission
 JOURNAL Submitted (19-JUL-2001) Immunology, Beitaipinglu Hospital, Beitaipinglu, Beijing 100039, China
 COMMENT Method: conceptual translation supplied by author.
 FEATURES Location/Qualifiers
 source 1..1420
 /organism="Gallus gallus"
 /db_xref="taxon:9031"
 /tissue_type="sternal"
 /dev_stago="17-day embryo"
 /country="China"
 /note="breed: San-Huang"
 Protein 1..1420
 /product="alpha 1 type IIA collagen precursor"
 sig_peptide 1..25
 Region 26..114
 /region_name="N-propeptide"
 Region 115..139
 /region_name="N-telopeptide"
 Region 140..1147
 /region_name="triple helical domain"
 Region 1148..1174
 /region_name="C-telopeptide"

批注: The serial number of the amino acid sequence

批注: the sequence of other vertebrate

批注: This is the time when the sequence was submitted for the second time, and also is the time when the sequence was first published.

批注: Corresponding mRNA serial number, the first filing date and the amending date of the sequence are completely consistent with those of AAK98621 (its corresponding amino acid sequence).

批注: The sequence was submitted for the second time after the paper was published.

批注: This is the date when the sequence was first submitted before the withdrawal from the Genebank; but the amino acid sequence submitted this time was not disclosed, no relevant sequence can be found in Genebank.

Region 1175..1420
/region_name="C-propeptide"
Region 1185..1420
/region_name="COLFI"
/note="Fibrillar collagens C-terminal domain; Found at
C-termini of fibrillar collagens: Ephydatia muelleri
procollagen EMF1alpha, vertebrate collagens alpha(1)III,
alpha(1)II, alpha(2) etc; smart:00038"
/db_xref="CDD:47387"
CDS 1..1420
/geno="COL2A1"
/coded_by="AY046949.1:145..4307"
/note="lacks exon 2; alternatively spliced"
ORIGIN |
1 mhgrrpprsa alllllllt aaaaaqdrdl rqpqpkqgkq cpgdikdvvq prgpppqep
61 aecqgqrgdr gokgokgeng prgrdgepgt oknprkppgpp sppgppgllgg nfnqnmnggf
121 dekaggqaqmg vmgqpmepmg prgpppgptga ppgqgfgqgnp kerpkepkasg pmgprgppgp
181 pgkpgddgct gkpgksgcrg ppgpqqgargf pgtpglpgvk ghrgypgldg akgeagapga
241 kkesgspgen gspgpmgprg lpgcrgtrpgp sgaagergnd glpgpaggpg pvgpbgapgf
301 pgapgskgea gptgargqpeg uaqkprgesgt pgspqpgapap gnpgtdgipg akgsagapgi
361 uqapqdpkprp gpppgpqgatg plgpkqgtgo pgiagtkgoq gpkgotgpgq pgapgpage
421 egkrqarged qaaapgvdkppk erkqapknrgf pgqdgllagpk gapgergpgag lagpkatgd
481 pgrrgepqlp gargintrgprg dagpqgkvvp tgapgndgrp gppgpgqgqrg qpgvmtpp
541 kgangepgka gekglpgspg lrglpgkdgc tgaagppgpa gpgvgergeqg apgsgfql
601 pgppqppgqes skpgdqgvpg eaqapqglvvp tgeerrlpeer zspqaaqglqg prglptpgt
661 dgpkatgpa gpnqaqgppg lqgmpgcerga agiaglkgdr gdvgckgpeq apkdgargl
721 tgpigppgpa gpngekgesg ppqpgenaga rgapgorgop gnpqpgqfng ppgadqpgna
781 kgcqgcpqgkq gdagupgppqg pgapqpgqgp tgvlgpkgar gqngppgatg fpgaaqrvgp
841 pgppqhpqppp ppqpgsagkdg pkvgvrdags pgragdpqglq gpnqpgqgokg opgdqpgap
901 dgppqpgqglq gqrgivglpg qrgcrgfpkl pgpsgepgkq gpgqsgqdrq pgppvqppgl
961 tgpqgepgre gnpqadgllp rduaaevkqd rgotgpvgap gnpqpgapg pgvptgkqgd
1021 rgetraaqpmi gpgqpgqgarg mpqgnqgprgd kgotgoagqr glkghrgftg lqglpgppgp
1081 sgdqqaagpa gpgqprkppk pvgqpgkdkhs nqmpqpgpilpp gprgrsgepg pagppqnpqgp
1141 pgppqppgtg idmsafaglg qtekpgdpir ymradeaagg lrqhdvevda tlkslnqle
1201 sirspegskk nparterdik lchpewksgd ywidpnqgct ldaikvfcnm otgetcvypt
1261 pssiprknww lsklkkh wfaetinggf hfsygdens pntasqmtf lrlstegsq
1321 nvtyhcknsi aymdeotgnl kkailiqgsn dvciraegns rftysvledg ctkhtgkwkk
1381 tvioyrlqkt srlsivdtap mdiggnadqef gvdigpvcfl

NOTE: The amino acid sequence

Attachment 3: Search record for AF452711, version AF452711.1 GI:28190290

LOCUS AF452711 5494 bp DNA linear [VR] 01-FEB-2003
DEFINITION Gallus gallus alpha 1 type II procollagen (COL2A1) gene, partial
ACCESSION AF452711
VERSION AF452711.1 GI:28190290
KEYWORDS
SOURCE Gallus gallus (chicken)
ORGANISM Gallus gallus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae;
Phasianinae; Gallus.
REFERENCE 1 (bases 1 to 5494)
AUTHORS Caixia, X., Yongzhi, X., Siqi, G. and Yuying, S.
TITLE Gallus gallus alpha 1 type IIA collagen precursor (COL2A1)
JOURNAL Unpublished
REFERENCE 2 (bases 1 to 5494)
AUTHORS Caixia, X. and Yongzhi, X.
TITLE Direct Submission
JOURNAL Submitted (27-NOV-2001) Immunology, Beitaipinglu Hospital,
Beitaipinglu, Beijing 100039, China
COMMENT [WARNING] On Jun 3, 2003 this sequence was replaced by GI:31340541.
FEATURES location/Qualifiers
source 1..5494
/organism="Gallus gallus"
/mol_type="genomic DNA"
/db_xref="taxon:9031"
gene <1..>5494
/gene="COL2A1"
mRNA join(<1..21,103..156,239..292,387..440,530..637,
746..799,913..966,1235..1396,1489..1596,1906..2013,
2174..2227,2325..2432,2701..2754,2864..2971,3106..3159,
3328..3435,3515..3803,4211..4398,4993..5235,
5348..>5494)
/gene="COL2A1"
/product="alpha 1 type II procollagen"
CDS join(<1..21,103..156,239..292,387..440,530..637,
746..799,913..966,1235..1396,1489..1596,1906..2013,
2174..2227,2325..2432,2701..2754,2864..2971,3106..3159,
3328..3435,3515..3803,4211..4398,4993..5235,5348..5494)
/gene="COL2A1"
/codon_start=1
/product="alpha 1 type II procollagen"

批注: The nucleotide serial number of the genome
批注: the sequence of other vertebrates
批注: the time when it was submitted for the second time

批注: This is the date when the sequence was first submitted before the withdrawal from the Genbank; but the nucleotide sequence submitted this time was not disclosed, no relevant sequence can be found in Genbank.
批注: It was replaced by sequence GI:31340541 on Jun 3, 2003.

/protein_id="AAQ33039_1"
/db_xref="C1:28190291"
/translation="PGKDQARGLTTGPJCOPPCPAGI^NGEKGESGPPCOPSGAACARGA^G
ERGEI^GAPCPACGACPPGAUQQI^GAKQEQQEPQKGDAGA^GPQCPGSGAPCPQGP^IGV
^IGPKGARGAQQGPPCATGPGAGRVRGPPGPNPGPPGPPGSAGKDGPKGVRCGDAGPP
GRACDPGLQGPAGPPCEKECPGEUDGIPAG^PDGPPGPQGLAGQRQG1VGLPQGRQCERGFFC
LPGP5GCPCKQCAPGSAGDRGPPGPVCPGCLTCPAGEP1GREGNPAGDPPGRDGAAGV
KGDRGEGTCPVCAPIGA^GAPGPVCPCTKQGDRGETGAQGPMGPSCPACARGM^GPQ
GPRGDKGKRTCEACERGLKCHRGFTGLLQGI.PGPPCPGSDQGAAGPAGPSCPRGPPGPVG
PSGKDGNSNGMPGP1GPPGPRCRSGEPPGAGI^PGNPGPVPPGPPCTG1DMSAFAGLQQ
TEKCPDPTRYMGADEAAGGLRQHDVEVDATLKSNNQ1ES1RSPEGSKKNPARTCRD1
KLCHIPEWKSQGDYWDNPQNQCTLDALKVFCNMETGETCVYPTPSS1PRKNWNTSHTKD
KIVWFAFTINGGPFHFSYGDENLSPNTASTQMTFLRLLSTEGSQNVTYIICKNSIAYMDE
ETGNLKKAT1TQGSNDV1RAE8GNSRFTYSV1EDGCTKHTGKWCKT1V1YRSQKTSR1
PTVVDIAPMD1GGAQEFVGVD1GPVCF1"

Note: The serial number of the corresponding amino acid sequence, the first filing date and the amending date of the sequence are completely consistent with those of AF452711 (its corresponding nucleotide sequence).

ORIGIN

批注: The nucleotide sequence (part sequence of the genome)

Attachment 4: Search record for AF452711, version AF452711.2 GI:31340541

LOCUS AF452711 [12003 bp DNA linear] [VR] 08-FEB-2006
DEFINITION Gallus gallus alpha 1 type II procollagen (COL2A1) gene, exons 8 through 52 and partial cds.
ACCESSION AF452711
VERSION AF452711.2 GT:31340541
KEYWORDS
SOURCE Gallus gallus (chicken)
ORGANISM Gallus gallus
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Archosauria; Dinosauria; Saurischia; Theropoda; Coelurosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae; Gallus.
REFERENCE 1 (bases 1 to 12003)
AUTHORS Xi,C., Liu,N., Liang,F., Guo,S., Sun,Y., Yang,F. and Xi,Y.
TITLE Molecular cloning, characterization and localization of chicken type II procollagen gene
JOURNAL Gene 366 (1), 67-76 (2006)
PUBMED 16297573
REFERENCE 2 (bases 1 to 12003)
AUTHORS Caixia,X., Yongzhi,X., Shiqi,G. and Yuying,S.
TITLE Gallus gallus alpha 1 type II A collagen precursor (COL2A1)
JOURNAL Unpublished
REFERENCE 3 (bases 1 to 12003)
AUTHORS Caixia,X. and Yongzhi,X.
TITLE Direct Submission
JOURNAL Submitted (27-NOV-2001) Immunology, Beitaipinglu Hospital, Beitaipinglu, Beijing 100039, China
REFERENCE 4 (bases 1 to 12003)
AUTHORS Caixin,X. and Yongzhi,X.
TITLE Direct Submission
JOURNAL Submitted (03-JUN-2003) Immunology, Beitaipinglu Hospital, Beitaipinglu, Beijing 100039, China
REMARK Sequence update by submitter
COMMENT On Jun 3, 2003 this sequence version replaced gi:28190290.
FEATURES Location/Qualifiers
source 1..12003
 /organism="Gallus gallus"
 /mol_type="genomic DNA"
 /db_xref="taxon:9031"
gene <1..>12003
 /geno="COL2A1"
mRNA join(<1..54,179..232,340..393,494..547,646..699,
 786..830,941..994,1086..1130,1244..1297,1387..1485,
批注: The nucleotide serial number of the genome
批注: The sequence of other vertebrate
批注: This is the sequence submitted for the last time after the paper was published.
批注: This is the date when the sequence was submitted for the first time; but the nucleotide sequence submitted this time was not disclosed, and no relevant sequence can be found in Genebank.

1681..1728, 2096..2194, 3080..3133, 3542..3649, 3738..3791,
 3883..3981, 4664..4717, 4800..4898, 4981..5034, 5159..5212,
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